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## The Tribe Ochyromerini (Coleoptera, Curculionidae) of Japan

### I. Genera with Six Segments in the Funicle<sup>1)</sup>

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**Abstract** The first part of our systematic studies on the tribe Ochyromerini (=Endaeini) of Japan deals with 6 species of weevils in the genera *Endaeus* SCHOENHERR, *Endaenidius* MORIMOTO and *Gryporrhynchus* ROELOFS. New taxa described in this paper are *Endaeus flavidus* sp. nov., *Endaeus hikosanus* sp. nov. and *Endaeus nychiommatoides* sp. nov. Diagnoses of genera and species, and illustrations of habitus, genitalia and other taxonomic characters are provided for each species.

**Key words:** Ochyromerini; Tychiinae; Curculionidae; revision; Japan.

The tribe Ochyromerini (=Endaeini) has been classified variously in the subfamily Prionomerinae, Anthonominae or Tychiinae. The genus *Endaeus* was assigned to “Groupe Ellescides” in the tribe Tychiini by LACORDAIRE (1863) and KLIMA (1934) treated it in the Tychiinae. The other genera were classified in the Prionomerinae by PASCOE (1873, 74). These genera were first grouped together as the “Gattungsgruppe Ochyromerina” by VOSS (1935) in the Prionomerini, and the tribe Endaeini was proposed in the next year by SCHENKLING and MARSHALL (1936) in the Prionomerinae. Although the name Endaeini has been used more commonly, it is apparently a junior synonym of the Ochyromerini, an emended name of Ochyromerina. This tribe has been classified in the subfamily Anthonominae in a broad sense including Prionomerini by VOSS (1937, 53, 58, 62) or in the subfamily Tychiinae by MORIMOTO (1962) and CLARK *et al.* (1977). The Endaeini by KISSINGER (1964) was a definition in the broadest sense including the tribes Lignyodini and Ellescini of CLARK *et al.* After the completion of our manuscript, OBERPRIELER (1993) published a paper on the African weevils of the Ochyromerini, who treated this taxon as a subtribe Ochyromerina of the Tychiini in the subfamily Curculioninae following after Kuschel's scheme.

Since the subfamilies and/or tribes Anthonomini, Prionomerini, Eugnomini, Tychiini, Lignyodini, Ochyromerini, Ellescini and Acalyptini are regarded as closely related taxa, as partly pointed out by MORIMOTO (1962), the

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present paper deals with the weevils of the tribe Ochyromerini of Japan as the first part of a series of papers on those taxa with the intention of clarifying their phylogenetic relationship.

### Tribe Ochyromerini

- Ochyromerina VOSS, 1935, Ent. Blätt., **31**: 228 (Prionomerini, "Gattungsgruppe"). — VOSS, 1937, Tijdschr. Ent., **80**: 135 (Anthonominae, Prionomerini). — OBERPRIELER, 1993, J. Afr. Zool., **107**(3): 218 (Curculioninae, Tychiini).
- Endaeini SCHENKLING et MARSHALL, 1936, Coleopt. Cat., 150 Prionomerinae: 6. — VOSS, 1941, Ent. Blätt., **49**: 53 (Anthonominae). — VOSS, 1953, Ent. Blätt., **19**: 53 (Anthonominae). — HUSTACHE, 1956, Bull. Acad. Malg., (n.s.), **33**: 104 (Prionomerinae). — VOSS, 1958, Decheniana, Beihefte, **5**: 108 (Anthonominae). — VOSS, 1962, Rev. Zool. Bot. afr., **58**: 274 (Anthonominae). — MORIMOTO, 1962, J. Fac. Agric. Kyushu Univ., **12**: 50 (Tychiinae). — KISSINGER, 1964, Curc. Amer. north of Mexico, Key to Gen.: 54 (Anthonominae). — CLARK *et al.*, 1977, Coleopt. Bull., **31**: 7 (Tychiinae). *syn. nov.*
- Ellescides LACORDAIRE, 1863, Gen. Coléopt., **6**: 603 (Tribu Tychiides) [partim].
- Prionomerinae PASCOE, 1876, J. Linn. Soc., Zool., **12**: 33 [partim].
- Prionomerini: VOSS, 1940, Tijdschr. Ent., **83**: 72.

This tribe contains small species of robust form and is easily known by the following combination of characters:

Phanerognathous; rostrum much longer than wide, cylindrical to sub-cylindrical; antennal scrobes straight and running obliquely to the lower part of eyes, or beneath the base of rostrum, or rarely to the middle of eyes; forehead between eyes narrower than the base of rostrum. Pronotum without ocular lobes; prosternum before coxae not emarginate, with a transverse submarginal sulcus; front coxae contiguous. Scutellum evident. Elytra much broader at humeri than prothorax, conjointly rounded at apex. Venter with 1st ventrite behind coxa a little shorter than 3rd and 4th combined, 2–4 ventrites curved posteriorly at latero-posterior corners in the same degree. Pygidium often partly exposed. Legs with front pair often larger than the posteriors; femora dentate; tibiae uncinata, the uncus often vestigial or absent in hind pair; claws divergent, appendiculate. Tergum of abdomen with paired wing-folding spicule patches on 5–7 tergites; 7th (female) or 8th (male) tergites with a pair of scrapers of stridulation organ touching the edge of elytron on the opposite side. Metendosternite with lateral arms, anterior tendons widely separated and arising from the base of furcal arms. Aedeagus with struts attached to or rarely articulated with penis at lateroventral corners of basal margin; inner sac with flagellum; tegmen ringed, often open dorsally, without parameres. Spermatheca comma-shaped, with lateral lobe indefinite or absent.

The bulk of weevils in this tribe is conspicuous for their greater front femora with larger tooth than the posteriors. Some have front legs similar to

the posteriors as those of the tribe Piazzorhinini. The latter may be separable from the tribe Ochyromerini by the short, robust and flat rostrum. A key to the genera of the tribe Ochyromerini in Japan is to be given at the end of the third report.

### Genus *Endaeus* SCHOENHERR

- Endaeus* SCHOENHERR, 1826, Curc. Disp. Meth., 250 (type species: *Endaeus castus* n. sp., designated but not described). — BOHEMAN, 1936, in SCHOENHERR, Gen. Sp. Curc., 3: 469 (type species: *Endaeus castus* BOHEMAN). — LACORDAIRE, 1863, Gen. Coléopt., 6: 603. — MARSHALL, 1933, Ann. Mag. nat. Hist., (10), 11: 1 (= *Nychiomma* PASCOE, *Endaeopsis* CHAMPION, key to spp. of continental Africa). — MARSHALL, 1941, Ann. Mag. nat. Hist., (10), 12: 184 (key to spp. of India). — HUSTACHE, 1956, Bull. Acad. Malgache, (n.s.), 33: 65–210 (key to spp. of Madagascar). — VOSS, 1958, Decheniana, Beihefte, 5: 108, 109 (= *Synnada* PASCOE). — VOSS, 1962, Rev. Zool. Bot., 58: 276 (key to subgenera). — MORIMOTO, 1962, J. Fac. Agric. Kyushu Univ., 12: 50. — MORIMOTO, 1984, Coleopt. Japan Col., Osaka, 4: 299.
- Endeus* GEMMINGER et HAROLD, 1871, Coleopt. Cat., 8: 2512 (incorrect subsequent emendation).
- Nychiomma* PASCOE, 1873, J. Linn. Soc. Zool., 11: 456 (type species: *Nychiomma testacea* PASCOE, by monotypy). — PASCOE, 1876, J. Linn. Soc., Zool., 12: 33.
- Endaeopsis* CHAMPION, 1914, Trans. Linn. Soc. Zool., 16: 437 (type species: *Endaeopsis curvimanus* CHAMPION, by original designation). — HUSTACHE, 1924, Bull. Acad. Malg., (n.s.), 7: 306.
- Synnada* PASCOE, 1874, J. Linn. Soc. Lond., 12: 32 (type species: *Synnada currucula* PASCOE, by monotypy). — VOSS, 1937, Tijdschr. Ent., 80: 136. — VOSS, 1940, Tijdschr. Ent., 83: 75.
- Eusynnada* HELLER, 1925, Zool. Meded., 8: 226 (type species: *Eusynnada plaxoides* HELLER, 1925, by original designation). **Syn. nov.**
- Persynnada* VOSS, 1943, Arb. morph. taxon. Ent., Berlin-Dahlem, 10: 165 (as subg. of *Eusynnada* sensu VOSS, 1943, by monotypy). **Syn. nov.**

*Eusynnada plaxoides* HELLER (type species of the genus) is unknown to us, but the original description and illustration are similar to *Synnada currucula* PASCOE except for the robust funicle of antennae. VOSS (1937, 53, 58) erroneously assigned weevils with seven segments in the funicle instead of six to *Eusynnada* and erected *Persynnada* for the species with six segments in the funicle. *Eusynnada* and *Persynnada* are newly synonymized with *Endaeus*.

The following genera may be closely related to *Endaeus* in having such common characters as: antennae with six-segments in funicle, front femora thicker than posteriors and with a large triangular tooth: *Jozena* PASCOE, *Menecops* FAUST, *Odontobarus* FAUST, *Omphasus* PASOE and *Zeiona* PASCOE.

*Omphasus aeratus* (type species of the genus) has characteristic scrobes on the rostrum and the bases of elytra as follows: scrobe dilated posteriorly including two striae, the dorsal stria shallow with sharp dorsal carinate margin directing towards middle of eye, the ventral stria sharp and glossy inside,

reaching obliquely down to basal one-fourth, scape of antennae not attaining eye but received in the ventral sulcus; elytra weakly produced anteriorly between scutellum and third stria at base.

*Zeiona pulchella* (type species of the genus) is an oval weevil with broadest pronotum at the base, and mimetic to a species of the scymnine Coccinellidae.

The remaining three genera are unknown to us, but are diagnostic in the following characters according to the original descriptions as: *Menecops* has the scrobes directing towards the middle of eyes and the club of antennae is not segmented; *Odontobarus* may be very close to *Endaeus*, but the type species has the rostrum dentate at sides; and *Jozena* has so flat eyes that the head and rostrum are continuously tapered anteriorly.

The genus *Endaeus* defined by MARSHALL and HUSTACHE comprises many heterogenous species. HUSTACHE (1956) proposed the subgenus *Aendaus* for the species with scarcely swollen and unarmed front femora. Although VOSS (1962) divided the genus into four subgenera, *Endaeus* s. str., *Endaeopsis*, *Omphasus* and *Teinomphasus*, his key is misleading at least to *Endaeopsis* and *Omphasus*, because he used different combinations of characters from the type species. By these keys, our species all go down to the subgenus *Endaeus* s. str. The definition applied here to this genus is a little narrower sense than those of MARSHALL and HUSTACHE in excluding the species with similar front legs to the posteriors as follow: antennal funicle six-segmented; front femora more or less thicker than posteriors; each with a large triangular tooth and with a row of erect setae beyond it. Front tibiae carinate on inner edge, with a row of suberect setae, often the carina indefinite. Pygidium often partly exposed in the male.

This genus contains about 60 species from the Oriental and Ethiopian Regions, and only four species occur in Japan.

### Key to Japanese Species

- 1(2) Derm black, or black with brownish rostrum and front legs. Antennal scape much shorter than funicle; club subelliptic, as long as second to sixth segments of funicle combined. Front tibiae widest near the apex ..... *E. nipponicus* VOSS et CHŪJŌ
- 2(1) Derm yellowish brown to brownish. Antennal scape nearly as long as funicle; club oval, as long as first 2 or 3 segments of funicle combined.
- 3(4) Front tibiae nearly straight, except for basal one-third slightly curved, without distinct dilatation internally ..... *E. hikosanus* sp. nov.
- 4(3) Front tibiae more or less curved, with distinct dilatation internally.
- 5(6) Front tibiae curved near the base, and straight in the distal 2/3 externally, widest a little beyond the middle ..... *E. flavidus* sp. nov.

6(5) Front tibiae evenly curved, widest near the apex

.....*E. nychiommatoides* sp. nov.

*Endaeus nipponicus* VOSS et CHÛJÔ

(Fig. 1)

*Endaeus nipponicus* VOSS et CHÛJÔ 1960, Niponius, 1 (3): 3-4 (type locality: Mt. Yakemine, Niigata Pref.). — MORIMOTO, 1962, Sci. Bull. Fac. Agric., Kyushu Univ., 19: 204.

*Endaeus japonicus* [sic]: MORIMOTO, 1984, Coleopt. Japan Col., Osaka, 4: 299.

Coloration variable; derm black, with apical part of rostrum, antennal scapes and tarsi brown, front legs and tarsi often dark brown (Holotype and Type I from Honshu); derm black, with antennal scapes, front legs and tarsi reddish brown, first segment of funicle, apical part of rostrum, and often tarsi dark brown (Type II from Hokkaido, Northern Honshu); or derm black, with rostrum, antennal scapes and first segment of funicle, front legs, and tarsi reddish brown, second segment of funicle and often tibiae dark brown (Type III from Ryukyus, Taiwan).

Forehead between eyes narrow, less than one-third to one-fourth as wide as

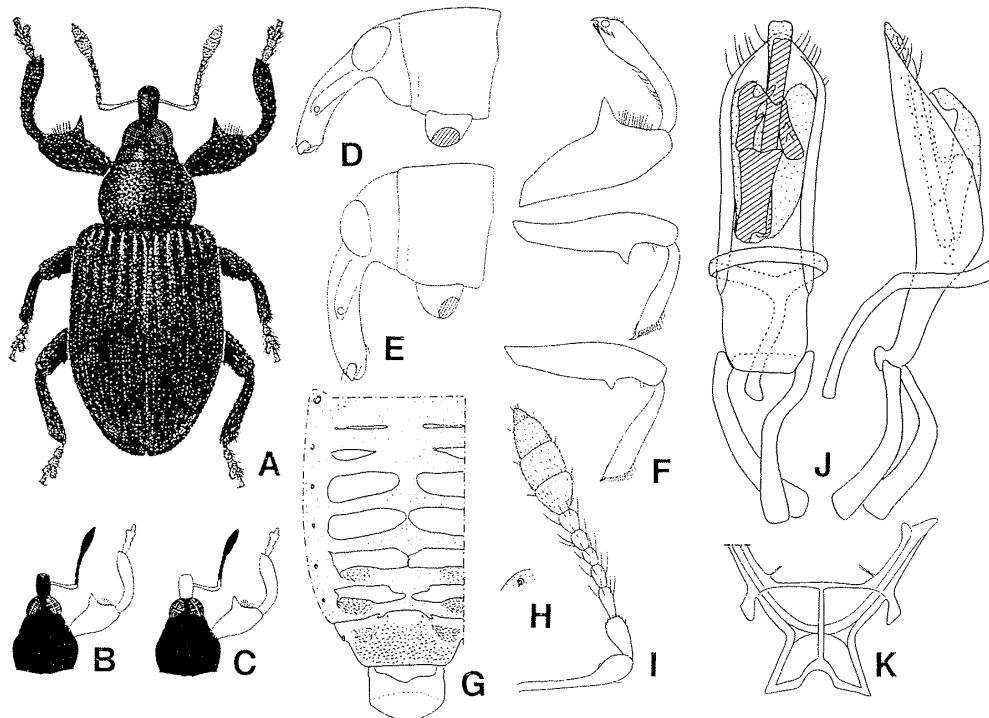


Fig. 1. A-J, *Endaeus nipponicus* VOSS et CHÛJÔ; K, *Endaeus flavidus* sp. nov. — A, Male; B, color pattern of head and front leg, Type II; C, ditto, Type III; D, head and prothorax, lateral view, male; E, ditto, female; F, legs; G, tergite; H, scraper, enlarged; I, antenna; J, penis and tegmen; K, metendosternite.

the base of rostrum. Eyes moderately convex from temples. Rostrum as long as (male) or a little longer than (female) pronotum, curved, parallel-sided, confluent punctate laterally on basal half, with fine punctures sparsely (female) or rugosely punctate (male) and shiny on apical half; antennal scrobes running obliquely to the lower part of eyes. Antennae inserted a little before (male) or just a little behind (female) the middle of rostrum; scape reaching eye, much shorter than funicle, as long as basal four segments of funicle combined; funicle with second segment a little shorter than first, third  $3/5$  times as long as second, fourth to sixth subequal in length, a little shorter than third, sixth a little longer than broad; club subelliptic, about 2.5 times as long as broad, as long as second to sixth segments of funicle combined.

Prothorax 1.3–1.4 times as wide as long, widest at the middle, feebly constricted near the apex, rounded laterally; dorsum rugosely punctate, with recumbent silvery setae. Scutellum a little longer than wide, with fine recumbent silvery setae.

Elytra 1.4–1.6 times as long as wide, widest a little behind the middle, with indefinite subapical calli; each interval clothed with fine recumbent and medially a row of subrecumbent silvery setae.

Legs clothed with recumbent silvery setae; front femora with a sharp triangular tooth, which is about  $2/3$  times as long as the width of femora at the widest point; front tibiae curved in basal half, and dilated internally near the apex.

Prosternum with coxae located on the middle, the distance between procoxae and submarginal sulcus nearly as large as that between this sulcus and anterior margin. Mesosternal process one-third as wide as middle coxa. Underside clothed sparsely with silvery setae.

Length: 2.5–2.9 mm.

*Specimens examined.* [Hokkaido] 1 ♀, Kojunai, Bibai, Hokkaido, 28. v. 1965, A. ABE leg. [Honshu] 1 ♂, Mt. Yakemine, Niigata Pref., 22. v. 1955, H. KOIKE leg. (holotype); 2 ♂, Inekarisawa-rindo, Hirosaki City, Aomori Pref., iv. 1988, T. NAKAMURA leg.; 1 ♂, Mt. Horyû, Suzu, Ishikawa Pref., 1. v. 1978, T. MIKAGE leg.; 1 ♂ 1 ♀, Mt. Kongô (alt. 1,000 m), Nara Pref., 26. v. 1991, K. SHIGEMATSU leg. [Ryukyus] 1 ♂, Shuri, Okinawa Is., 11. viii. 1969, H. MAKIHARA leg. 1 ♀, Mt. Bannadake, Ishigaki Is., 10. vii. 1992, K. SHIGEMATSU leg.; 1 ♀, Ushiku-mori, Iriomote Is., 11. iii. 1964, T. SHIRÔZU leg.; 1 ♀, 11. iii. 1964, S. KIMOTO leg. [Taiwan] 1 ♀, Fenchihu, Chia Yi Hsien, Taiwan, 1. vi. 1965, Y. HIRASHIMA leg.

*Distribution.* Japan (Hokkaido, Honshu, Ryukyus: Okinawa-hontô, Ishigaki-jima and Iriomote-jima Isls.); Taiwan (new record).

*Biological note.* This species was captured on the flower of *Magnolia kobus* (Kobushi in Japanese) in Honshu.

*Remarks.* This species is similar to *E. ater* MARSHALL from India, but the forehead is much narrower.

*Endaeus flavidus* sp. nov.

(Figs. 1K, 2)

Derm brownish, with antennae and legs lighter.

Forehead between eyes one-third to one-fourth as wide as the base of rostrum, weakly convex. Eyes prominent from temples. Rostrum a little shorter than pronotum, weakly curved, slightly widening toward apex, confluent punctate on basal half, with a faint median keel on basal half and antennal scrobes running obliquely to beneath the base of rostrum. Antennae inserted at apical one-third (male) or a little before the middle (female) of rostrum; scape reaching eyes, nearly as long as funicle; funicle with first segment as long as second, third to sixth subequal in length, a little longer than half the length of second, sixth nearly as long as broad; club oval, twice as long as broad, nearly as long as basal three segments of funicle combined.

Prothorax 1.10–1.25 times as wide as long, widest a little behind the middle, subapical constriction weak, rounded laterally; dorsum rugosely punctate, with fine recumbent silvery setae. Scutellum a little longer than wide, with recumbent setae as on pronotum.

Elytra 1.5–1.6 times as long as wide, widest a little behind the middle, with faint subapical calli, clothed with fine recumbent golden yellowish setae; striae

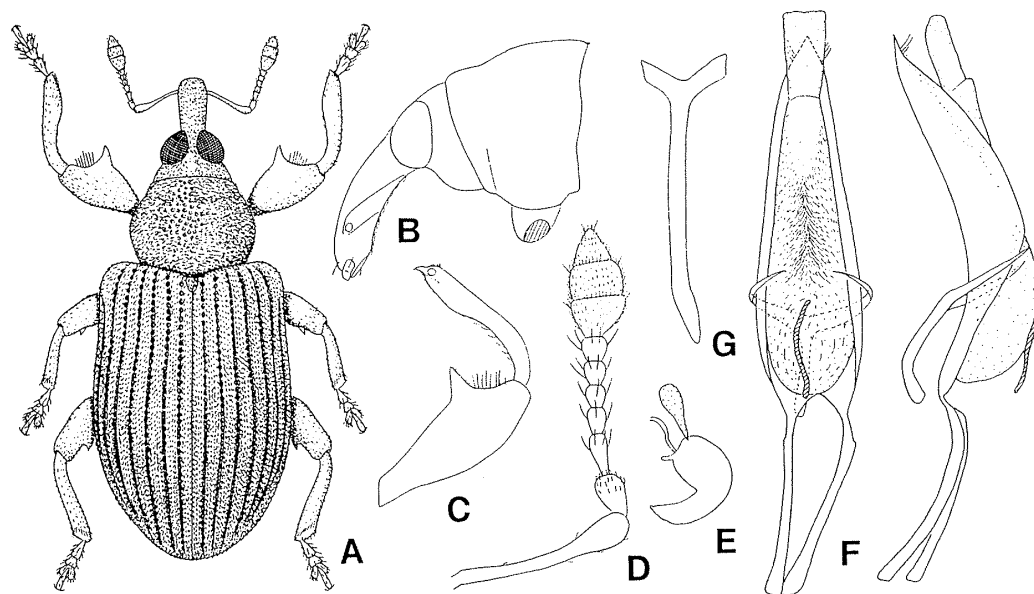


Fig. 2. *Endaeus flavidus* sp. nov. — A, Male; B, head and prothorax, lateral view, male; C, front leg; D, antenna; E, spermatheca; F, penis; G, spiculum gastrale.

deeply and closely punctured.

Legs clothed with fine recumbent silvery setae; front femora with a sharp triangular tooth, which is about 2/3 times as long as the width of femora at the widest point; front tibiae curved in basal half, dilated internally a little before the middle, and thence narrowing toward apex.

Prosternum with coxae located on the middle, the distance between procoxae and submarginal sulcus as large as that between this sulcus and anterior margin. Mesosternal process one-third as wide as middle coxa. Underside clothed with recumbent silvery setae.

Length: 2.6–3.4 mm.

Holotype: ♂ (Type No. 2931, Kyushu Univ.), Ohjibaru, Takaharu-cho, Miyazaki Pref., 23. v. 1990, A. NAGAI leg.

Paratypes: [Honshu] 2 ♀, Mino City, Gifu Pref., 11. vi. 1990, T. NOHIRA leg.; 2 ♀, Tsukui, Yokosuka City, Kanagawa Pref., 19. v. 1989, M. HORIKAWA leg. [Shikoku] 1 ♀, Mt. Ishiduchi, Ehime Pref., 4. v. 1952, Y. WADA leg. [Kyushu] 1 ♂, same data as holotype.; 1 ♂, Ôdomari, Ôsumi Prov. (Kagoshima Pref.), 25. v. 1953, I. HIURA leg.; 1 ♂ 1 ♀; Cape Sata, Ôsumi Prov., 30. v. 1953, I. HIURA leg.; 1 ♀, 29. v. 1953, I. HIURA leg.; 1 ♂ 5 ♀, 2-5. v. 1958, K. MORIMOTO leg.; 1 ♂ 1 ♀, 25. v. 196, S. KIMOTO leg.; 1 ♀, 1. vi. 1959, H. MAEBARA leg.; 1 ♀, Kurokimachi, Fukuoka Pref., 7. vi. 1989, J. ONAGAMITSU leg. (at light).; 1 ♂, Mt. Joyama, Munakata, Fukuoka Pref., 16. vi. 1974, K. KIDO leg.; 1 ♀, Mt. Wakasugi, Chikuzen (Fukuoka Pref.), 23. v. 1954, K. MORIMOTO leg. [Taiwan] 1 ♀, Fenchihu, Chia Yi Hsien, Taiwan, 12. iv. 1965, T. SAIGUSA leg.; 1 ♀, 12. iv. 1965, S. UÉNO leg.

*Distribution.* Japan (Honshu, Shikoku, Kyushu); Taiwan.

*Biological note.* Some specimens were captured on the flower of *Pittosporum tobira* (Tobera in Japanese) in Honshu.

*Remarks.* This species is similar to *E. nipponicus* VOSS et CHÛJÔ, but easily separable from it by the coloration.

### *Endaeus hikosanus* sp. nov.

(Fig. 3)

*Female.* Derm brownish, with antennae and often legs a little lighter.

Forehead between eyes 3/5 times as wide as the base of rostrum, flat. Eyes convex from temples. Rostrum longer than pronotum, curved, confluent punctate on basal half, slightly widening toward apex; antennal scrobes running obliquely to the lower part of eyes. Antennae inserted a little before the middle; scape reaching eye, as long as funicle; first segment of funicle as long as second to third segments combined, second a little longer than third, third to sixth subequal in length, sixth transverse, about 1.2 times as broad as long; club



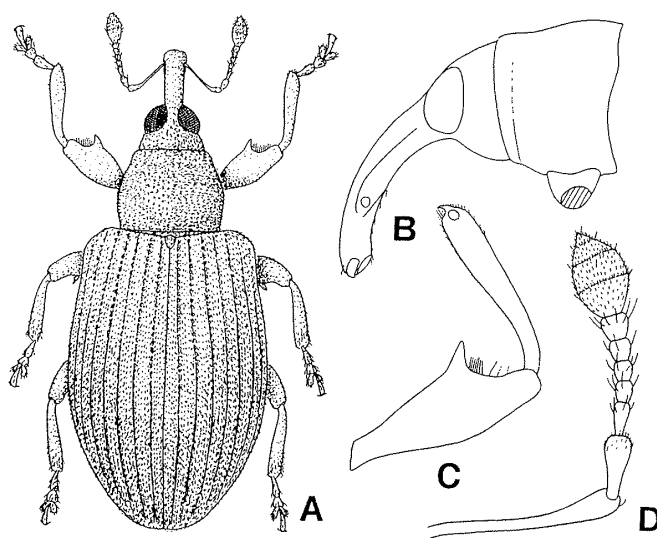


Fig. 3. *Endaeus hikosanus* sp. nov. — A, Female; B, head and prothorax, lateral view; C, front leg; D, antenna.

oval, twice as long as broad, almost as long as basal two segments of funicle combined.

Prothorax 1.3–1.4 times as wide as long, widest at the middle, weakly rounded laterally; dorsum finely punctured, with fine recumbent pale setae. Scutellum tongue-shaped, with fine recumbent pale setae.

Elytra 1.50–1.55 times as long as wide, widest a little behind the middle, without subapical calli, clothed with fine recumbent pale setae.

Legs clothed with fine recumbent pale setae; front femora a little thicker than the posteriors, with sharp triangular tooth; front tibiae slender, slightly curved in basal third, without internal dilation.

Prosternum with coxae located a little behind the middle, the distance between procoxae and submarginal sulcus larger than that between this sulcus and anterior margin. Mesosternal process one-third as wide as the coxa. Underside clothed with fine recumbent pale setae.

Length: 2.25–2.75 mm.

*Male.* Unknown.

*Holotype:* ♀ (Type No. 2932, Kyushu Univ.), Mt. Hikosan, Fukuoka Pref., 17. iv. 1992, K. MORIMOTO leg.

*Paratypes:* 10 ♀, same data as holotype; 6 ♀, 2. v. 1992, H. KOJIMA leg.; 3 ♀, 10. ix. 1955, T. YOSHIDA leg.

*Distribution:* Japan (Kyushu).

*Biological note.* Weevils were captured on *Illicium religiosum* (Shikimi in Japanese).

*Remarks.* This is very similar to *Endaenidius ikezakii* in first appearance,

but the tooth of front femora is sharp triangular.

*Endaeus nychiommatoides* sp. nov.

(Fig. 4)

Derm yellowish brown, antennae and legs a little lighter.

Forehead between eyes narrow, weakly convex, with median fovea. Eyes large, moderately convex, coarsely faceted. Rostrum stout, slightly curved, nearly parallel-sided, similar in both sexes, with confluent punctures on basal half, a median carina on the basal third continuous with that on forehead and one or two indefinite carinae on each side; antennal scrobes running obliquely to beneath the base of rostrum. Antennae inserted a little before the middle of rostrum; scape touching the lower edge of eyes when retracted, longer than funicle; funicle with first segment broadly oval, second a little shorter than first, third to sixth subequal in length, a little longer than a half of second, sixth transverse, 1.6–1.7 times as broad as long; club oval, nearly as long as basal three segments of funicle combined.

Prothorax 1.25–1.35 times as wide as long, widest a little behind the middle (male), or often a little before the middle (female), subapical constriction very weak, more (female) or less (male) strongly rounded laterally, with a conspicuous depression on each side behind the anterior margin in the female, which is filled with setae; dorsum finely punctured, coriaceous, clothed with fine recumbent pale setae. Scutellum subtriangular, with fine recumbent pale setae.

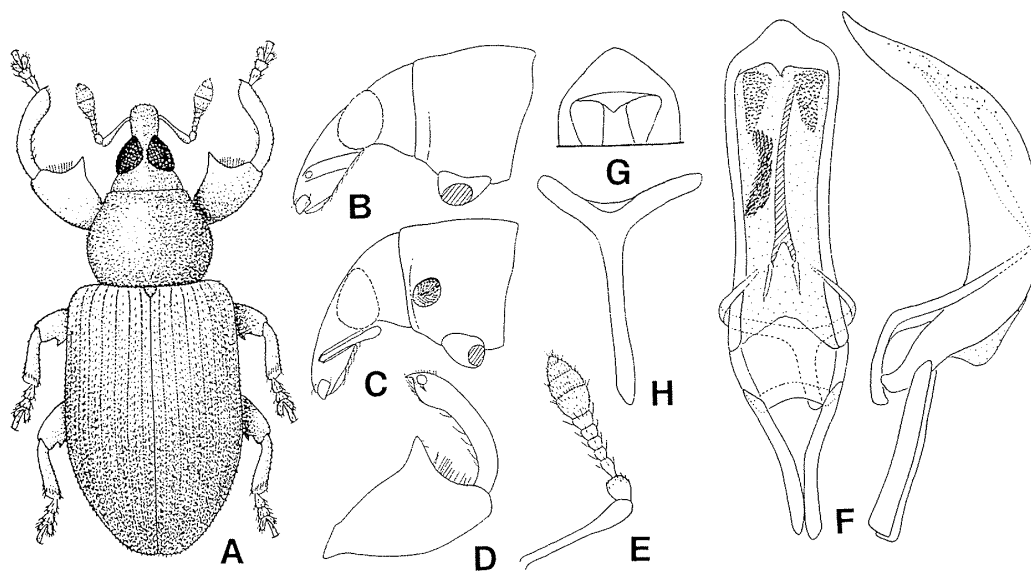


Fig. 4. *Endaeus nychiommatoides* sp. nov. — A, Male; B, head and prothorax, lateral view, male; C, ditto, female; D, front leg; E, antenna; F, penis; G, apex of penis; H, spiculum gastrale.

Elytra 1.50–1.55 times as long as wide, widest at the middle, without subapical calli, each interval clothed with fine recumbent and medially a row of stout pale setae; striae with fine punctures.

Legs clothed with recumbent pale setae; front femora much thicker than posteriors, nearly twice the width of the posteriors, with a triangular tooth, which is less than half the width of the femora at the widest point; front tibiae curved, dilated internally just behind the apex.

Prosternum with coxae located behind the middle, the distance between procoxae and submarginal sulcus as large as (male) or much larger than (female) that between this sulcus and anterior margin. Mesosternal process narrow, less than one-fourth as wide as middle coxa.

Length: 1.7–2.3 mm.

Holotype: ♂ (Type No. 2933, Kyushu Univ.), Komi, Iriomote Is., 18. vii. 1963, Y. MIYATAKE leg.

Paratypes: [Ryukyus] 1♂, Kuchinoshima Is., Tokara Isls., 26. vi- 3. vii. 1969, H. MAKIHARA leg.; 1♂, Kaara-yama, Ishigaki Is., 14. iii. 1964, Y. MIYATAKE leg.; 1♂ 1♀, Mt. Omoto, Ishigaki Is., 14. x. 1963, S. MIYAMOTO leg.; 1♂, 4. iv. 1978, K. BABA leg.; 1♂ 2♀, Yoshihara, Ishigaki Is., 16. x. 1963, S. MIYAMOTO leg.; 1♂ 1♀, Mt. Komi, Ishigaki Is., 23. iv. 1981, K. BABA leg.; 4♂ 2♀, same data as holotype.; 1♂, Shirahama, Iriomote Is., 27. vii. 1963, Y. MIYATAKE leg.; 3♂, same locality as holotype, 27. viii. 1962, M. CHŪJŌ leg.; 1♂, Ushiku-mori, Iriomote Is., 11. iii. 1964, S. MIYAMOTO leg.; 1♂, Nakaragawa, Iriomote Is., 5. x. 1963, K. MORIMOTO leg.; 1♂ 1♀, Ohara-Mihara, Iriomote Is., 19. iv. 1993, H. KOJIMA leg.; 1♀, Sonai, Yonaguni Is., 25-29. viii. 1969, H. MAKIHARA leg.; 1♀, Mt. Inbidake, Yonaguni-jima Is., 23. iv. 1993, H. KOJIMA leg. [Taiwan] 1♀, Chiao-Li-Ping, Chiayi Hsien, Formosa, 13. iv. 1965, S. UENO leg.

*Distribution.* Japan (Ryukyus: Kuchinoshima, Ishigaki-jima, Iriomote-jima and Yonaguni-jima Isls.); Taiwan.

*Remarks.* This species is closely related to *E. testaceus* (PASCOE) from Sarawak originally described in the genus *Nychiomma*. The type series of this species in the PASCOE collection contains two specimens on the same card, of which the right specimen has the conspicuous depression filled with setae on each side of the prothorax behind the anterior margin, the pronotum is broadest at one-third from apex and slightly and evenly constricted before the base, and the pygidium is not exposed; whereas in the left specimen, the pronotum is simply rounded at sides and broadest in the middle, the lateral depressions are absent, and the pygidium is vertical and exposed. It is, however, not apparent if these are the different sexes of the same species or not. The present new species is common with *E. testaceus* on the following characters: rostrum robust, prothorax with a conspicuous depression with full of setae on each side

in the female, the procoxae located behind the middle of prosternum, the distance between the procoxae and submarginal sulcus is much greater than the distance between this sulcus and anterior margin in the female.

### Genus *Endaenidius* MORIMOTO

*Endaenidius* MORIMOTO, 1962, J. Fac. Agric. Kyushu Univ., **11**: 382–383 (type species: *Endaenidius ikezakii* MORIMOTO, by original designation). — MORIMOTO, J. Fac. Agric. Kyushu Univ., **12**: 50. — MORIMOTO, 1984, Coleopt. Japan, Col., Osaka, **4**: 299.

**Diagnosis.** Antennae with six segments in funicle, scape much shorter than funicle. Front femora not thicker than the posteriors, each with a minute tooth, without a row of erect setae beyond it. Each tibia with a minute uncus arisen from inner angle, unci of hind pair much smaller than in the anteriors. Pygidium concealed.

**Note.** This genus is similar to *Endaeus* or congenetic with it in a broad sense after the definition by HUSTACHE (1956), but weevils with the following characters can be separable as a natural group and had better be classified in an independent genus from *Endaeus*: all the legs are similar in shape and size, with a minute tooth on each femur, and without special setae beyond the teeth of femora and inner margins of tibiae on the front legs. *Zephiantha* PASCOE has similar characters, but the teeth of femora are larger, the posterior margin of the second ventrite curved posteriorly at sides and the other sutures of venter are straight. This weevil is similar to *Sphinxis koikei* at first sight, but the antennal funicle is different and the second ventrite is much shorter than the third and fourth ventrites combined.

### *Endaenidius ikezakii* MORIMOTO

(Fig. 5)

*Endaenidius ikezakii* MORIMOTO, 1962, J. Fac. Agric. Kyushu Univ., **11**: 383–384 (type locality: Mt. Taradake, Nagasaki Pref.; ♀).

Derm yellowish brown, often reddish brown, with antennal scape, funicle and legs lighter, abdomen darker.

Forehead between eyes a little narrower than the base of rostrum, flat. Eyes suboval, convex from temples. Rostrum very similar in both sexes, as long as (female) or a little shorter than (male) pronotum, slightly curved, with confluent punctures, wrinkled, with a faint median keel on basal half; antennal scrobes becoming indefinite posteriorly, running toward the lower part of eyes. Antennae inserted a little before the middle; scape reaching (female) or barely reaching (male) eyes, much shorter than funicle, as long as basal three segments of funicle combined; funicle with first segment as long as or a little shorter than

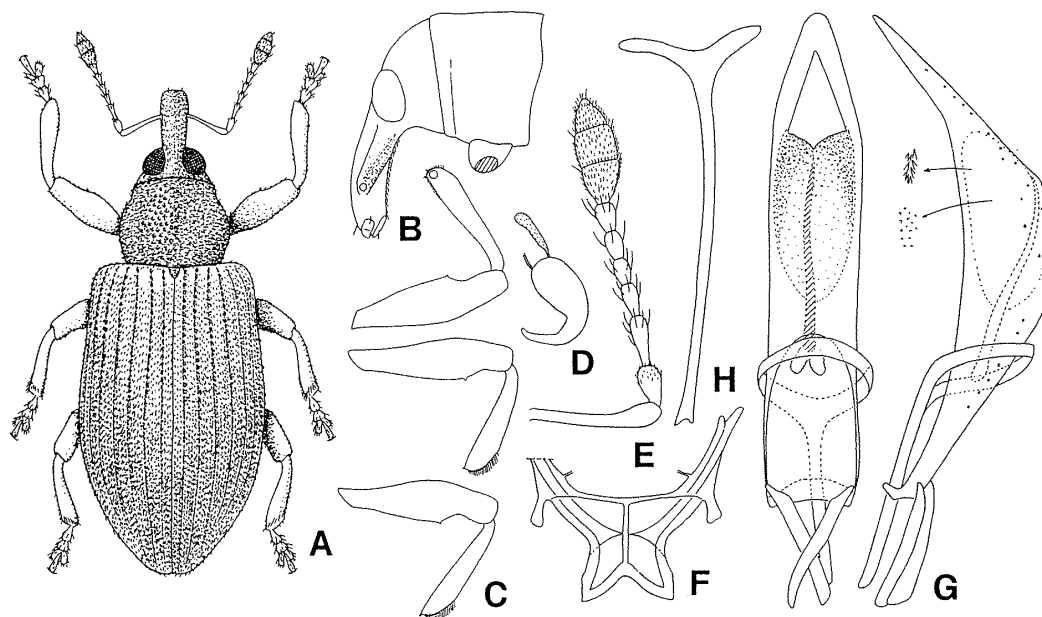


Fig. 5. *Endaenidius ikezakii* MORIMOTO. — A, Male; B, head and prothorax, lateral view; C, legs; D, spermatheca; E, antenna; F, metendosternite; G, penis; H, spiculum gastrale.

second, third a little more than a half of second, fourth to sixth subequal in length, just a little shorter than third, sixth about 1.3 times as long as broad; club about twice as long as broad, slightly shorter than second to fourth segments of funicle combined.

Prothorax 1.1–1.3 times as wide as long, widest at the middle, constricted near the apex and weakly at the base, rounded laterally, dorsum rugosely punctured, with recumbent pale setae. Scutellum tongue-shaped, a little longer than wide, with recumbent pale setae.

Elytra 1.55–1.75 times as long as wide, widest at the middle, without calli on declivity, clothed with pale recumbent setae.

Legs clothed with pale recumbent setae; each femur with a minute sharp tooth, middle and hind ones often indefinite; front tibiae curved weakly near the base, then weakly widening toward the apex, outer margin obliquely truncate at tip.

Prosternum with front coxae located a little behind the middle, the distance between procoxae and submarginal sulcus a little larger than that between this sulcus and anterior margin. Mesosternal process one-third as wide as middle coxa. Underside clothed with pale recumbent setae.

Length: 2.4–2.9 mm.

*Specimens examined.* [Kyushu] 1 ♀, Mt. Taradake, Nagasaki Pref., 4. v. 1988, Y. IKEZAKI leg. (holotype); 30 exs., Mt. Hikosan, Fukuoka Pref., 5. ix.

1993, H. KOJIMA leg.; 1 ex., 26. viii. 1970, Y. TAKAKURA leg. [Yakushima Is.] 4 exs., Yodokogoya—Hananoego, Yakushima Is., 25. x. 1979, H. MAKIHARA leg.

*Distribution.* Japan (Kyushu, Yakushima Is.).

*Biological note.* This species is captured on *Illicium religiosum* (Shikimi in Japanese).

### Genus *Gryporrhynchus* ROELOFS

*Gryporrhynchus* ROELOFS, 1875, Annls. Soc. ent. Belg., **18**: 189 (type species: *Gryporrhynchus obscurus* ROELOFS, by original designation). — MORIMOTO, 1962, Sci. Bull. Fac. Agric. Kyushu Univ., **19**: 204. — MORIMOTO, J. Fac. Agric. Kyushu Univ., **12**: 50.

*Gryporrhynchus* [sic]: MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 299, pl. 59, fig. 3.

*Diagnosis.* Funicle of antennae six-segmented, robust, as long as scape, second segment less than a half as long as first, fifth and sixth transverse. Front femora not thicker than the posteriors, with a minute tooth. Front and middle tibiae uncinatate from the outer angle, hind pair with minute uncus arisen from inner angle. Pygidium exposed in both sexes.

*Note.* This genus is similar to *Endaenidius* in having six-segmented antennal funicle and similar front femora to the posteriors, but the robust funicle is as long as the scape, and the pygidium is exposed.

### *Gryporrhynchus obscurus* ROELOFS

(Fig. 6)

*Gryporrhynchus obscurus* ROELOFS, 1875, Annls. Soc. ent. Belg., **18**: 189–190. — MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 293, pl. 59, fig. 3. — MORIMOTO, 1992, Esakia, Fukuoka, (32): 8 (Honshu, Shikoku, Kyushu, Korea: Cheju-do Is.).

Derm blackish, often dark brown, with antennal scapes brown, often legs and elytra dark brown to brown.

Forehead between eyes a little narrower than the base of rostrum, flat, with subrecumbent setae. Eyes suboval, moderately convex from temples. Rostrum stout, curved, a little shorter than pronotum, confluent punctured on basal half, with a weak carina on each side behind the middle; antennal scrobes running obliquely toward the lower part of eyes. Antennae inserted a little (male) or just a little (female) before the middle of rostrum; scape reaching but not touching eye; funicle with first segment more than twice the length of second, second just a little longer than third, third to sixth subequal in length, sixth about 1.5 times as broad as long; club broadly oval, 1.6–1.7 times as long as broad, as long as second to sixth segments of funicle combined.

Prothorax 1.2–1.3 times as long as wide, widest at the middle, subapical

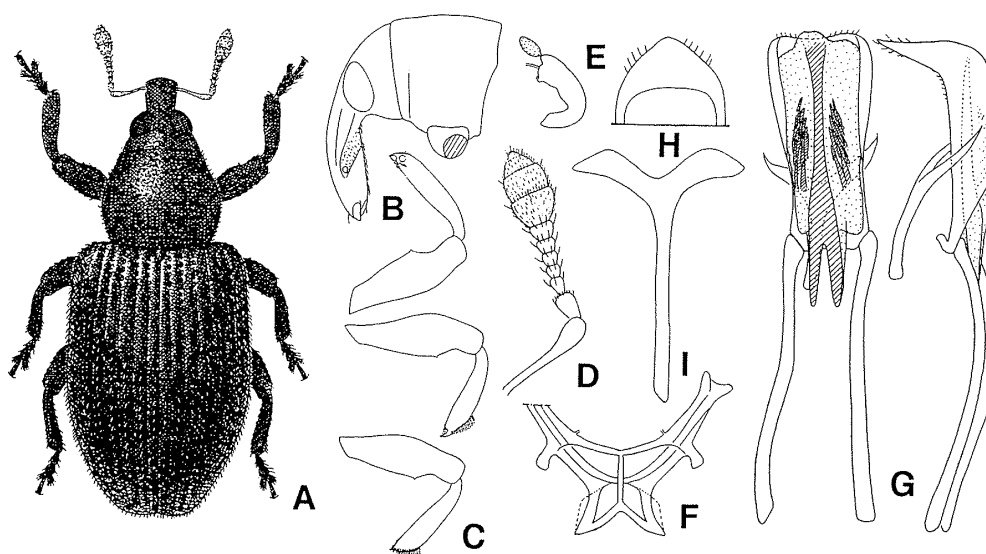


Fig. 6. *Gryporrhynchus obscurus* ROELOFS. — A, Male; B, head and prothorax, lateral view; C, legs; D, antenna; E, spermatheca; F, metendosternite; G, penis; H, apex of penis; I, spiculum gastrale.

constriction weak, rounded laterally, dorsum coriaceous, clothed with dark greyish recumbent setae and sparsely blackish erect setae. Scutellum tongue-shaped, a little longer than wide, with whitish setae.

Elytra 1.40–1.55 times as long as wide, widest at the middle, without calli on declivity; each interval clothed with fine recumbent setae and medially a row of dark suberect setae.

Legs clothed with pale recumbent setae; each femur with a minute tooth; front tibiae curved near the base, slightly widened distally from basal third.

Prosternum with coxae located behind the middle, the distance between procoxae and submarginal sulcus a little larger than that between this sulcus and anterior margin. Mesosternal process a little less than a half as wide as middle coxa. Underside clothed with dark recumbent setae.

Length: 1.8–2.5 mm.

*Specimens examined.* 13 exs., [Shikoku] Tokushima (Jinryo-mura), Kochi (Jinzenji); [Kyushu] Fukuoka (Kashii, Inunaki, Hirao); [Ryukyus] Okinawa-hontô Is. (Mt. Terukubi), Ishigaki-jima Is. (Mt. Omoto); [Korea] Cheju-do Is.

*Distribution.* Japan (Shikoku, Kyushu, Ryukyus: Okinawa -hontô and Ishigaki-jima Is.); Korea (Cheju-do Is.).

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